German Road Safety Council **2001**

Deutscher Verkehrssicherheitsrat

Telematics in road traffic

Resolution of the Executive Board of 16./17.10.2001 based on the recommendation of the Committees of Vehicle Engineering and Legal Issues

Introduction

The Working Group on Telematics within the Legal Issues Committee (Dr. Graeger, Dr. Jung, Dr. Scheibach) met three times and, during the 118th Meeting held on 13th December 2000, submitted a proposal of recommendations to this Committee to be discussed and approved. The recommendations which were approved by the committee as a draft recommendation to be approved later on by the DVR Board of Directors was harmonised first through an interdisciplinary procedure with the Chairman of the Vehicle Engineering Committee, Prof. Dr. Langwieder. After an additional consultation in the Legal Issues Committee during its 19th meeting on 5th and 6th April 2001 and in the Vehicle Engineering Committee meeting on 26th June 2001, the joint draft proposal was approved. The Board of Directors approved the proposal during its meeting on 17th October 2001 as an official recommendation.

I.
Preamble

Over the last few years, several electronic driver support systems have been studied, developed and implemented.

They did not only improve the comfort of driving the vehicle, but they also increased substantially the safety of vehicles and of the traffic flow, and contributed equally to the reduction of traffic accidents.

The supreme commandment regarding the influence into the decision-making autonomy of the driver through these systems should be Article 13 of the Vienna Convention on Road Traffic:

> **"Each driver must be able in any case to exercise control over his vehicle in order to be in a position to meet all the obligations to exercise due care and to make all the manoeuvres needed."**

Furthermore, it is also the

"EU Commission Recommendation of 21st December 1999 on safe and efficient in-vehicle information and communication systems: A European statement of principles on human and machine interface"

that tries to take into account the new developments in which the tasks, that are originally related to the driver, are passed on to electronic systems.

It is with a critical eye that DVR observes the ongoing endeavours to subdue these new technological possibilities to considerations related to engineering, traffic flow, road safety and road user behaviour, which are sometimes political ones, without analysing sufficiently the legal and practical consequences of these new technologies.

At a European level, a current example is the efforts of prescribing the speed to be driven in a compulsory way via out-vehicle speed adaptation systems, and as a consequence to interfere with the decision-making autonomy of the driver. DVR would like to indicate even now that the opposite effect of the expected positive results might occur, in case the ***user*** is not included sufficiently and in time in the elaboration process of the relevant rules, and if these new technologies lack acceptance from the persons affected. The expected objective that is to be reached by putting the new technologies into the service of the road safety could thus be undermined.

Therefore, DVR will follow and observe from a safety point of view the implementation of the

Decision of the Council of 26th June 2000 for the improvement of road safety (2000/C 218/01),

which sets the present frame for activities related to the use of electronic systems. This will occur in close co-operation with other safety organisations in Europe.

II.
Definition of Terms

1. **Telematics in Road Traffic**

   The term "telematics" was created artificially. It is a combination of "telecommunication" and "informatics" (or "informatic sciences" or "computer sciences").

   To simplify the explanation of its meaning, one should mention that it deals with collection, transmission and processing of information.

The superior aims of telematics applications in the transport sector are to improve the systems offered to the road users as well as the economic and ecological optimisation of traffic as a whole by means of a set of steering and information mechanisms that are valid for any type of traffic mode.

Partial aims within the framework of this global conception consist primarily in the following items:

- render the flow of traffic more fluent, thereby increase efficiency and safety simultaneously with a reduction of energy consumption and accidents;
- increase division of work between the traffic systems by optimising the connections and the guarantee of corresponding transport systems;
- create information offers with a high quality standard and a systematic approach;
- enable a more efficient dealing with incidents;
- use the existing traffic infrastructure in a more efficient way and
- increase the basic conditions for traffic planning by means of a more detailed registration of the traffic situation.

This paper deals only with telematics in road traffic, telematics in other traffic systems such as rail transport and public transport will not be dealt with.

2. The term **Driver Assistance Systems (DAS)** refers to any system that supports the driver in his task of driving the vehicle, relieves him from dealing with routine tasks or aims at increasing the safety and/or comfort regarding his task of driving the vehicle (as for example ABS, ACC, ESP) or are being done by telematics devices (as for example GPS in the case of route guidance systems). Information regarding the task of driving the vehicle are a component of DAS.

   FAS are among others: Antiblock Braking Systems (ABS), Traction Control System, Adaptive Cruise Controllers (ACC*),* Braking Assistant System (BAS), Electronic Stability Programme (ESP), Parking Assistant Systems, Fatigue Warning Devices.

3. **Intelligent Speed Management - ISM** comprises all devices that serve the aim of influencing the speed in order to increase traffic safety or the flow of traffic. These may be external, situation-driven devices (such as variable message signs on motorways) or also in-vehicle devices that may communicate with external devices (such as Intelligent Speed Adaptation - ISA).

4. **Intelligent Speed Adaptation (ISA)** is a device of vehicle-based speed management which basically comprises three levels of interference:

4.1 ISA as an information system with optical or acoustic reading or warning in cases when in the place where the vehicle is situated in a concrete situation, a static or dynamic (variable message signs) condition assignment regarding maximum speed is reached.

4.2 ISA as a system activated by the motorist himself where the motorist himself decides whether or not to activate it and thus – either from outside via pole or headed by GPS or, and this would be the other option, via information that is stored on a CD-ROM built into the vehicle, the condition existing in that very place regarding maximum speed, will be taken over automatically (as for example by using speed limitation devices according to ECE Regulation No. 89 / of 1989).

4.3 ISA as a mandatory system which makes it impossible to have an oversteering of the speed limitation headed from outside (or which enables this action only in an emergency case breaking an electronic seal or by means of oversteering).

5. Separate electronic recording systems regarding driving attitude and accident data memory will not be dealt with in the present paper. They need a specific study.

III.
Basic Requirements

1. DVR basically welcomes any electronic innovation in the field of vehicle engineering and of infrastructure that lead to improving traffic safety. These need, however,

- to have a plausible and also practical benefit for the road users,
- to be understandable in their function and easy to handle,
- to be payable (i.e. dispose of an appropriate cost effectiveness ratio), and
- to avoid placing any unnecessary burden on the driver or overstraining him.

2. The introduction of such systems must not restrict the responsibility of the driver for operating his vehicle.

3. In situations where the task of driving the vehicle cannot be sufficiently coped with by the driver himself (for example for reasons of time like in ABS situations), technical systems can take over this task. In these very special cases, this goes also for systems that cannot be oversteered by the driver.

4. In cases where the task of driving the vehicle can be coped with, interventions in the systems of the vehicles against the will of the driver are, however, rejected. A fully autonomous driving as a general rule in road traffic creates serious problems in the area of traffic law and of traffic safety. It is therefore rejected.

5. For the sake of using best the security features of Driver Assistance Systems, the drivers shall be informed more thoroughly and be familiarised with these systems. In doing so, it is necessary to make it absolutely clear that the limits set by physical rules cannot be shifted and that these systems are only designed to assist the driver in his task of driving the vehicle.

6. Currently, there is no reason to support the admission of an electronic linking of vehicles. Before this can be done, it is absolutely indispensable to clarify the problems regarding traffic and traffic safety linked to this issue.

7. The introduction of an ISA system that can not be oversteered,

   a) would require a law which would have to consider especially the basic rights regarding freedom from bodily harm (Article 2, paragraph 2 of the German Constitutional Law) and regarding general freedom of action (Article 2, paragraph 1 of the German Constitutional Law) as well as the principle of commensurability (weighing out the dangers for life and limb as well as for the property owned which might be evoked by ISA as against the benefits that might be generated by it.).

   b) would require a modification of article 13 paragraph 1 and also of article 8 paragraph 5 of the Vienna Convention which presuppose a permanent control of the vehicle. A modification requires the submission of an amendment with the Secretary General of the United Nations.

IV.
Liability

1. First of all, it is necessary to differentiate between civil and penal/criminal law.

2. Especially in the area of civil law, there are different kinds of liabilities as specified below:

   - liability of the driver/vehicle owner
   - liability of the manufacturer (product liability)
   - liability of the public sector
   - liability of the system operator

3. A presentation of all the details related to the issue of liability would go beyond the frame of this paper. The following explanations are therefore limited to those related to compulsory, not manageable intelligent speed-adaptation systems ISA (see II, 4.3). As far as details of liability are concerned, reference is made to the paper published by Prof. Berz in DAR 12/2000, pp. 545ff, "Liability aspects for to the use of telematics systems in road traffic“.

   a) The **driver** basically is not liable for damages caused as a consequence of the intervention of a non-manageable ISA system.

   b) In all those cases, when an accident is caused by the intervention through the ISA system, the owner of the vehicle is liable for the damage, although he did not drive the vehicle.

   c) Driver and owner usually are jointly and severally liable.

   d) The construction and manufacturing of a non-manageable ISA system must fulfil high requirements to avoid claims in the area of product liability, since the safety expectations related to road safety are extremely high. In the case of a failure of a built-in system, that works automatically, especially as regards the deficiency of the system based on §3 ProdHaftG (Law for Product Liability) must be taken into account, according to which a product is defective, if it does not offer the safety that it reasonably and legitimately can be expected to offer under all circumstances.

      In the case of a product failure of a whole line, one would have to think of a faulty design.

   e) As far as public liability is concerned, the State (or government) is liable for damages caused by wrong operation or by lacking maintenance of the infrastructure, that means negligent behaviour of the persons working for the public sector or State.

      The State is liable for material damages caused by a deficient construction of the infrastructure on the basis of procedures equivalent to expropriation compensations. At all events, the State is liable for personal damages caused by a deficient construction of the infrastructure, on the basis of denial damage, for personal damages like injuries of the body, which would not only be health-related, but entail also financial consequences for the victim in those cases when the injured person is not entitled to require compensation from other parties.

   f) In the case of introduction of an ISA system that is not controllable nor manageable by the driver, the required relevant law – as required in paragraph III, 7a - should also regulate the liability of the operator in order to protect the users' rights.

4. As far as penal law is concerned, the aspect of the driver's self-responsibility for his behaviour is not removed. In this sense, all the rules belonging to traffic law and all fines are still valid and applicable.

V.
Statement regarding a compulsory introduction of an ISA system

In addition to the basic demand formulated in paragraph III 4 above, the following statement is issued:

1. An electronic intervention from outside into the driving process of a vehicle (that means management of the motor forces, steering, breaking) through ISA is to be rejected from a legal point of view, since it is seen as a contribution to a heteronomous vehicle driver.

2. Because of a lack of associative mental skills, ISA is not able to collect different experiences like a human person can, it can neither anticipate dangers nor react in an appropriate and flexible manner which depends on a given situation.

   As a compulsory system, ISA cannot be switched off nor be controlled, it does not only give recommendations to the driver, but it forces certain behaviours upon him, takes away his responsibility thus putting him under tutelage.

3. It would not be responsible to accept an intervention from outside without taking into consideration the concrete situation of the driver and the traffic.

4. A retro-active fitment of ISA systems into old vehicles is not feasible due to the lack of necessary electronic motor devices. Therefore, for a longer period of time, there would exist a dangerous mixture of vehicles on the roads, some of them equipped with ISA and others without that system.

5. Last but not least, one would have to consider that the introduction of ISA would require a high level of technical and financial investments.

For the board:

signed

Prof. Manfred Bandmann
Präsident